



## Feasibility Studies for Mineral Projects: Part 2 of a Six-Part Series

### Feasibility Studies: Essential to Determining the Technical and Economic Viability of Mineral Deposits

As we learned in Part 1 of this series, mineral exploration is the first step in the discovery of economic mineral deposits which provide the raw materials needed to manufacture countless products essential for our everyday lives. Feasibility Studies are the next step in the process and are crucial in the determination of the technical and economic viability of a mineral deposit. This paper outlines the basic steps of the feasibility process and the information that goes into these documents.

#### I. General Information

Once an exploration project has successfully identified a mineral deposit, the next step in the process is to dig deeper into the data and information acquired and to determine the ultimate technical and economic feasibility of developing and mining a deposit. The document that results from this process is called a Feasibility Study.

In the interest of transparency and providing meaningful and accurate information to the investing public, the mining industry adheres to certain guidelines and rules in the preparation of Feasibility Studies. The Canadian Securities Administration has developed the National Instrument 43-101<sup>1</sup>, which many countries use today as the format for these disclosure documents<sup>2</sup>. Teams of professionals prepare the Feasibility Study, many of whom are considered Qualified Persons, who have expertise in mining, mineral processing, reserve estimation, permitting, and many other technical and economic areas.

#### II. Basic Components of a Feasibility Study

All Feasibility Studies are required to contain the same basic information based on the regulatory requirements outlined in NI 43-101. These basic components include the following:

1. General information about the project location, access to the project area, description of the property, and land ownership, climate of the area, local resources, infrastructure, and physiography of the area.
2. Specific information on the geology of the deposit, the deposit type, overall geologic setting, and the type of mineralization present.

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<sup>1</sup> NI-43-101 refers to Canadian Securities Administrators National Instrument (NI) 43-101, which is an internationally accepted reporting disclosure document that adheres to a strict protocol.

<sup>2</sup> There are other related requirements which this paper will not discuss.

3. Information on the drilling completed, the number and type of samples, analyses performed, and security of those samples.
4. Mineral resource and reserve estimates (classifications of mineralization based on the geologic confidence level derived from sample analyses, etc.).
5. Mining methods, mineral processing and recovery, and metallurgical testing.
6. Project infrastructure, market studies, and contracts.
7. Summary of state, local, and federal permit requirements, environmental baseline studies, stakeholder outreach efforts, and the social and community impacts.
8. Capital and operating costs, and an overall economic analysis.
9. Any other relevant data and information.
10. Interpretation, conclusions, and recommendations.

### III. The Various Phases of Feasibility Work

- A. Preliminary Economic Assessment (PEA)
  - a. Usually the first step in analyzing the economic viability of a project
  - b. Is at the lowest level of confidence<sup>3</sup>
- B. Pre-Feasibility Study
  - a. A more comprehensive and detailed study than the PEA
- C. Feasibility Study
  - a. Comprehensive study
  - b. Meant to serve as the basis for a final decision on whether to develop the project and is often required by financial institutions in their evaluation of whether to provide project financing.
  - c. The purpose of requiring a 43-101 report is to ensure that misleading or erroneous information relating to mineral properties is not published and in turn promoted to investors. The NI 43-101 originated and is overseen by the Canadian Securities Authority, but has become widely accepted, and is a requirement for U.S. mining projects.

*Feasibility Studies form the basis upon which companies and financial institutions decide whether to proceed with a proposed mining project and are a summary of scientific and technical information whose audience is the investing public and their advisors.*

#### **About WMC**

WMC is a grassroots organization with over 200 members nationwide. Our members work in all sectors of the mining industry including hardrock and industrial minerals, coal, energy generation, manufacturing, transportation, and service industries. We hold annual Washington, D.C. Fly-Ins to meet with members of Congress and their staff, and federal land management and regulatory agencies to discuss issues of importance to both the hardrock and coal mining sectors. For more information about WMC, visit our website at [www.wmc-usa.org](http://www.wmc-usa.org).

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<sup>3</sup> This paper is intended to be a broad overview and will not discuss the varying levels of resource evaluation that these studies are required to adhere to.